Inspection of village water tank 3/31/2006 RLS

- Dave Pushka and I inspected the outside of the tank at ground level and looked inside the manhole. The manhole was bolted closed when we left.
- Penetrations, sizes approximate
  - 24 inch manhole at ground level
  - 10 inch bottom fill/drain about six inches above the bottom
  - 10 inch roof vent
  - 24 inch roof manhole
  - 6 inch overfill drain
  - level transmitter
- The level transmitter includes a system of cables and floats strung across the tank.
- The tank contains six inches of water
- The tank wall just inside the manhole is smooth and slightly silty.
- The tank floor is visible through the water just inside the manhole. The floor is a little lightly silted.
- Though murky inside the paint appears to be in excellent condition.
- The roof is self-supporting plates, not structure was seen.
- William Newcomb is the building manager for the adjacent building which apparently is associated with the tank water system.
- The steel courses are eight feet high, total tank shell height is therefore 32 feet.
- The outside of the tank is in fair condition, some peeling paint and rusty scale.
- It is a Horton tank.
- Diameter from Dave's Email 40.7 feet
- On a preliminary basis the cleaning will include power rinse and scrubbing with long-handled brushes, possibly with detergent. Don't know if the roof will need brushing, probably not. Then mopping out whatever a pump can not remove.

Tasks

1. Pump out the water, about 5000 gallons
2. Find out where the drain/fill line goes and make sure it is adequately isolated.
3. Get a ladder and inspect the roof
   a. Are there other penetrations?
   b. get better dimensions of the penetrations
   c. Find out the shape of the roof, domed? Conical?
   d. Is the roof to shell joint sealed?
   e. Address the fall hazard.
4. Prepare a confined space entry permit.
   a. Both manholes open
   b. Oxygen concentration
   c. Drain/fill line isolated
5. Inspect the walls and floor better
   a. Use powerful flashlights
   b. How much silt is away from the drain/fill connection?
   c. See how much scrubbing is needed to remove silt from the walls
   d. Find if there are any rusty patches

    e. Estimate what it will take to seal the openings and remove the floats.
    f. Estimate the cleaning cost.
6. Perform FEA with the purging model
7. Determine that the tank can withstand a modest internal pressure.
    a. In particular look at roof to shell joint
    b. Determine shell lifting w.r.t. anchor bolts
8. Make sure the tank will have pressure relief.
9. Design and install dispersion and exhaust piping systems.
10. Select the gas monitoring system.
11. Make a plan to quickly refill with air, including where the argon goes. Maybe initial tests should be with nitrogen for this reason.
12. Publicize in Ferminews.
13.